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Subject: Second Batch of Additional Comments to the Science Advisory Board Economic Guidelines Review Panel, Covering Chapters 9-10

The Institute for Policy Integrity (“Policy Integrity”) at New York University School of Law¹ submits the following additional comments to the Science Advisory Board’s Economic Guidelines Review Panel. Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy. These comments supplement our prior written comments submitted on May 12.

Given the short time between the May 1 notice of the SAB panel’s additional meetings and the May 12 deadline set for written comments, Policy Integrity initially focused our first set of comments on the first seven chapters of the draft *Guidelines*, based on our understanding that the SAB panel would cover those chapters during its first two meetings. Upon learning that the SAB panel had changed its agendas to move up its reviews of Chapter 9-10, Policy Integrity prepared the following comments. Policy Integrity may submit a final batch of comments in advance of the panel’s third meeting.

Again, our comments on Chapters 5 and 7 were already submitted in our first batch of comments, on May 12. These comments now complete our review of the topics to be covered during the SAB panel’s second meeting, by adding comments on Chapters 9 and 10.

Comments on Chapter 9

Impacts to Consumers Depend on Supply Curves, Marginal Costs, and Elasticities: On page 9-11, lines 18-19 state that new environmental requirements “typically” cause an upward shift in the market supply curve, in response to which consumers buy less of the product or pay a higher price. Similar statements are made in section 9.5.2.1. However, the exceptions to this assumption are important, and the *Guidelines* should point out that negative effects on consumers may not occur if: (1) the costs of compliance fall mostly on inframarginal producers,² or (2) compliance requires high fixed costs but does not increase marginal costs (or even decreases marginal costs, as is possible with regulations that effectively require firms to adopt more efficient technologies). The *Guidelines* should offer guidance on which regulatory contexts or approaches may be associated either with fixed costs rather than marginal cost increases, or with inframarginal compliance costs.

¹ This document does not purport to present New York University School of Law’s views, if any.

² For example, if oil and gas plants set the market-clearing price in a particular electricity market, a regulation that affects the inframarginal coal plants may not have an effect on consumers, as a change in coal plants’ bid prices may not change the market price that consumers face.

More generally, the relationship between different categories of cost and supply curves (and, consequently, pass-through of regulatory costs to consumers) is complex and should be assessed on a case-by-case basis. Economic theory suggests that fixed costs should not be decisive for price levels, and there is some evidence that firms only partly account for fixed costs when setting their prices.³ Ideally, EPA would test empirically, or assess through other evidence, whether fixed-cost variations have affected prices in the past in the particular sector subject to regulation. The impact of fixed costs of compliance on the product price should be calculated accordingly.

Page 9-11 at line 24 and page 9-12 at lines 7-8 also discuss elasticities of demand and supply, and the *Guidelines* note that elasticities could change over time. This would be a good place to remind analysts, as the Glossary does, that, in fact, most goods are increasingly price elastic over time.⁴

Attribute-based Regulations: On pages 9-13 and 9-14, the *Guidelines* discuss reasons for variable impacts of regulation across firms. Another important example of variable impacts, which warrants special consideration in the *Guidelines*, is attribute-based regulation: regulation that defines requirements as a function of some product characteristics, such as size or weight. For instance, EPA's greenhouse gas standards for passenger cars and light trucks define their requirements as a function of the vehicle footprint.⁵ If various firms have products differing in the relevant attribute, the firms will be affected differently by the regulation. The costs of attribute-based regulation should be studied particularly carefully, because one compliance strategy might be changing the attribute of the product, and without sufficient attention to this possibility, a standard engineering approach to predicting compliance costs might overestimate those costs.

Regional Spillovers: On page 9-14, lines 9-13 discuss the possibility of plant relocation in response to regulation. Here, the *Guidelines* should caution analysts against using estimates from the empirical literature that compare regulated areas/firms against non-regulated areas/firms using difference-in-difference methods to estimate the response in production or employment. Such estimates ignore the spillover effects from regulated to non-regulated areas/firms, and thereby tend to overestimate the production and jobs effects of the regulation.⁶ When the relocation is properly accounted for, studies often show that there are no reductions in aggregate economic activity.⁷

A Balanced Approach to Employment Analysis: The prior version of the *Guidelines* included the line: "If this task is undertaken, the analyst needs to quantify all of the employment impacts, positive and negative, to present a complete picture of the effects." (at page 9-8 of the 2010 version). The revised *Guidelines* instead only suggest on page 9-16 at line 16: "To present a complete picture, an employment impact analysis will describe both positive and negative changes in employment." The normative instruction that employment analysis "needs to" be balanced by looking at both positive and negative impacts is an important instruction to keep, as courts often view with skepticism analyses that focus only on costs or benefits if in fact all effects are quantifiable. Lines 16-17 on page 9-16 should be

³ See Lucas, M. R. (2003): 'Pricing decisions and the neoclassical theory of the firm', *Management Accounting Research*, 14(3), pp. 201-217 (for review of accounting and economic studies on how firms set prices with respect to fixed costs).

⁴ See also Policy Integrity's May 12 Comments at 2.

⁵ See Koichiro Ito & James M. Sallee (2018) *The Economics of Attribute-Based Regulation: Theory and Evidence from Fuel Economy Standards*, *Review of Economics and Statistics* 100, p.319-336.

⁶ For example, if a plant relocates such that 10 jobs move from region A to region B, a comparison of regions A and B would show a difference of 20, even though in fact only 10 jobs were relocated.

⁷ See the discussion in Morgenstern, *Analyzing the Employment Impact of Regulation* p. 37-38 in Cary Coglianese, Adam M. Finkel, Christopher Carrigan (2013) *Does Regulation Kill Jobs?* University of Pennsylvania Press.

changed as follows: “To present a complete picture, an employment impact analysis ~~will~~ **must** describe both positive and negative changes in employment.”

Besides the need to consider both positive and negative effects on employment, a balanced employment analysis must be properly contextualized. A mere count of jobs gained or lost—especially if the analysis is looking only at the regulated sector and closely connected downstream/upstream sectors—provides little useful information to evaluate the merits of a regulation. A balanced employment analysis should consider the welfare impacts of any job changes and then contextualize that impact by comparing it to the regulation’s other costs and benefits.⁸

Positive Employment Effects: While section 9.5.2.4 mentions the possibility of job increases from regulation, the vast majority of the text deals only with negative employment effects. For instance, Box 9.1 discusses solely job losses, even though the same graphic could also illustrate the effects when regulation causes someone to transfer from unemployment to employment. Similarly, page 9-17 at line 11 discusses only the possible transitional costs of layoffs but not the possible benefits of hiring, especially hiring of otherwise underutilized workers. More generally, a longer discussion on the effects of higher labor demand is warranted, for instance on the choice between increasing working hours for existing employees and new hires, as well as the possible welfare benefits if a regulation spurs hiring in a sector or region that is experiencing a substantial number of underutilized workers.

Another path by which regulations can have positive employment effects is by improving health in ways that have job-related benefits. Besides a very brief mention on page 9-30 at lines 14-15 (which is focused on the benefits to employers of improved productivity) and a barebones acknowledgement in Box 9.1 that “environmental regulation protects human health” (see line 1 of the graphic), there is almost no discussion of this important group of benefits in Chapter 9. While Chapter 7 did include some discussion of how to properly monetize productivity benefits from environmental protections, the inclusion of such an effect in the cost-benefit analysis would not excuse its omission from the economic impact analysis. Chapter 9 should include more details on job benefits related to environmental health, citing the literature that shows that pollution substantially worsens job outcomes,⁹ job performance,¹⁰ and other employment-related impacts.¹¹ While some of these effects will be harder to quantify, especially those they operate over much longer time horizons, these effects should not be ignored.

Caveats to the Alleged Health-Wealth Tradeoff: In Box 9.1, the text unequivocally states that “the economics literature has found connections between wealth and health.” Similarly, the graphic includes pathway number 5, which is labeled as “Wealth affects health.” However, these statements ignore the literature casting doubt on the idea that reducing wealth causes a reduction in health, by showing instead that the reverse may be true, as reduced health can lead to reduced wealth, or else that both health and wealth may simply be correlated with other factors, like education.¹² Importantly, the Dobkin

⁸ See generally Michael Livermore & Jason Schwartz, *Analysis to Inform Public Disclosure on Jobs and Regulation*, in Does Regulation Kill Jobs? (Cary Coglianese et al. eds., 2013).

⁹ Isen, Rossin-Slater, and Walker (2015) were able to link air pollution changes around the time of birth to adult earnings and employment. They find an estimated gain of \$4,300 in earnings per person for a total of \$6.5 billion (2008 dollars) in gains. Isen, A., Rossin-Slater, M. and Walker, R. (2015) Every Breath You Take – Every Dollar You’ll Make: The Long-Term Consequences of the Clean Air Act of 1970. *Journal of Political Economy* 125, no. 3 (June 2017): 848-902.

¹⁰ James Archsmith, Anthony Heyes, and Soodeh Saberian, “Air Quality and Error Quantity: Pollution and Performance in a High-Skilled, Quality-Focused Occupation,” *Journal of the Association of Environmental and Resource Economists* 5, no. 4 (October 2018): 827-863.

¹¹ Almond, Douglas, Currie, Janet, Duque, Valentina (2018) Childhood Circumstances and Adult Outcomes: Act II, *Journal of Economic Literature* 56, p. 1360-1446.

¹² See Richard Revesz & Michael Livermore, *Retaking Rationality* at 72-73 (2008) (citing James P. Smith’s *Unraveling the SES-Health Connection*).

et al. study summarized in the text would even seem to suggest that health affects wealth, and not the other way around.

Consequently, the following redlines are recommended: In the graphic, the fifth pathway should be labeled: “Wealth affects **may be correlated with** health,” and the arrow should not point solely from Wealth → Health, but instead should point both directions: Wealth ↔ Health. Also in the textbox, the final paragraph should read: “Finally, the economics literature has found **connections some correlations** between wealth and health. Sullivan and von Wachter (2009a) find . . . Dobkin et al. (2018) find that adverse health events measured by hospital admissions can lead to reduced earnings and increased risk of bankruptcy for those without health insurance. **Other studies, such as Smith (2005) also show that reduced health may be associated with reduced health. Analysts should consider the job- and wealth-related effects of regulatory impacts on health.**”

Scope of Employment Effects: Throughout section 9.5.2.4, the *Guidelines* focus on employment effects in the regulated sector and the upstream/downstream sectors.¹³ However, employment impacts generally will not be confined within the regulated sector, but rather might spill over to the rest of the economy—a phenomenon best understood when using the general equilibrium framework. This is true both in respect to the direct flows of labor force between sectors (laid off workers moving to other sectors) and in relation to indirect effects caused by changes in consumer choices. EPA’s greenhouse gas rule for passenger cars and light trucks provides a good example of such effects, stemming in this case from substantial consumer savings on gasoline. While a drop in consumer spending on gasoline might decrease employment in the oil and gasoline sectors, consumers will spend the money they save elsewhere in the economy, causing employment increases in the other sectors. The net employment effect of those changes will depend on relative labor intensity of the affected sectors (as measured by the amount of labor per dollar of output). The *Guidelines* should acknowledge in section 9.5.2.4 the role that general equilibrium models can play in understanding such broader, economy-wide employment effects.

Regulation can also induce technical changes, which, in the long term, may change not only the total demand for labor but also the type of labor demanded (skilled versus unskilled), thereby affecting future wages.¹⁴ While the welfare components of such changes are notoriously difficult to quantify, Chapter 9 should at least acknowledge the existence of such effects.

Understanding the Consequences of Employment Effects: The kinds of quantitative analyses suggested on page 9-20 do not account for the full employment impacts and largely focus on counting the jobs gained or lost in the regulated sector. However, the *implications* of the jobs lost or gained may be very different depending on the general market situation. The consequences of laying off workers will be very different against a background of full employment and if the workers are skilled, as compared to a situation of high unemployment or if the workers’ skill set is narrow. For quantitative analyses to provide meaningful information on labor impacts, they need to account for such context.

Ensuring Transparency in CGE Modeling: CGE is a useful tool for understanding effects of regulation, especially the employment effects. However, the lack of standardization among those models and their complexity result in “black-box” characteristics, and it is relatively easy to twist these models to produce a desired result. Section 9.5.5 should set standards for transparency around usage of CGE models. At

¹³ The text also mentions sectors producing substitutes and complements to the regulated product.

¹⁴ See for instance Kirill Borissov, Alexandra Brausmann & Lucas Bretschger (2019), *Carbon pricing, technology transition, and skill-based development*, European Economic Review 118, p. 252-269 (for the demonstration of how policy affects technology selection which transmits incentives for human capital formation).

minimum, the agencies should present the system of equations used and specify the parameters, such that replication is possible.

Add OMB's Cautionary Notes: On page 9-21, the *Guidelines* include a few “cautionary notes.” However, many of the important “pitfalls” in employment analysis that OMB routinely flags are not explicitly mentioned in the *Guidelines*. The *Guidelines* should look, for example, to OMB’s 2017 *Report to Congress* (published in 2019),¹⁵ which cautions analysts against “expecting a precise, measurable impact from most individual regulations,” “ignoring long-run or indirect impacts” (which may mitigate any direct, short-run effects), or “ignoring the importance of timing,”¹⁶ and specifically for environmental regulations, reminding analysts that “the effects of environmental regulation on the labor market can be difficult to assess,” that overall the “evidence on the effect of environmental regulation on employment is both suggestive and mixed,” and concluding with the finding that “studies attempting to measure the effect of environmental regulation on net exports, overall trade flows, and plant-location decisions have produced estimates that are either small, statistically insignificant, or not robust to tests of model specification.”¹⁷

Energy Substitution Analysis: The *Guidelines* should include a special discussion of the need to analyze the environmental consequences of energy substitutions motivated by regulatory effects. Section 9.5.2.6 discusses impacts on related markets and substitutes generally; Section 9.5.2.7 discusses the requirement to analyze adverse effects on energy supply; and on page 9-26, line 16 mentions how CGEs can be used to model impacts on energy supply and energy prices. However, none of these sections fully reminds analysts of the need to consider how, if a regulation changes the production costs of fossil fuels, for example, it can change the supply and demand for those fuels as well as for energy substitutes in ways that may have important emissions consequences. A number of models (MarketSim, NEMS, IPM) exist that can analyze such effects to various degrees,¹⁸ and given the potential importance of such downstream emissions effects, the *Guidelines* should remind analysts of the need and options for energy substitution analysis.

Comments on Chapter 10

Ranking Distributional Outcomes: On page 10-17, the *Guidelines* conclude that “there is no commonly accepted way to rank distributional outcomes,” and specifically that social welfare functions and inequality indices “are not sufficiently developed for application to EPA regulatory analysis.” This leaves analysts with little guidance on the methods or purpose of ranking distributional outcomes. The *Guidelines* should remind analysts, as *Circular A-4* does, that economic efficiency may not always be “the only or the overriding public policy objective,” and distributional considerations, as well as unquantified effects, may be a reason for decision-makers not to select the regulatory option with the largest net monetized benefits.¹⁹ The following language could be added to page 10-17, right after the sentence “Nor is there a consensus as to which one should be used.”—“**This does not mean, however, that**

¹⁵ https://www.whitehouse.gov/wp-content/uploads/2019/12/2019-CATS-5885-REV_DOC-2017Cost_BenefitReport11_18_2019.docx.pdf

¹⁶ *Id.* at 38-39.

¹⁷ *Id.* at 40, 43 (citing Jaffe et al.).

¹⁸ See Peter Howard, Policy Integrity, *The Bureau of Land Management's Modeling Choice for the Federal Coal Programmatic Review* (2016), https://policyintegrity.org/files/publications/BLM_Model_Choice.pdf (reviewing the models available for energy substitution analysis).

¹⁹ *Circular A-4* at 2.

distributional considerations could never justify the choice of a regulatory alternative with lower quantified net benefits.”

Willingness to Pay to Protect Children: On page 10-22, the *Guidelines* should add more support to the discussion on why and how individuals may “systematically place a different economic value on reducing health risks to children.” For example, in the Department of Transportation’s rule requiring the installation of back-up cameras in vehicles, the agency considered a parental-grief adder to capture the special willingness to pay to avoid a childhood mortality caused accidentally by an adult.²⁰ The *Guidelines* should add, at line 19: “As a result, for rules that reduce the risk of premature death among children, a standard VSL may not adequately account for factors like parental grief.”

Intergenerational Impacts: Intergenerational effects are not limited to cases of climate change and exposures to parents prior to a child’s conception. EPA’s recently proposed changes to the national primary drinking water standards for lead present an important example: A child exposed to lead at age 7 can have income-related effects up until retirement at age 65. If a regulation will continue to change future lead exposures over, for example, a 35-year period, then a 7-year-old child affected at the end of that 35-year period will not even be born for 28 more years, and their income benefits will stretch into the next century.²¹ The *Guidelines* should broaden its list of examples to include such effects as intergenerational impacts. The following language could be added on page 10-25 at line 6: “Similarly, reducing future generations of children’s exposure to toxic chemicals, with benefits that may stretch over their entire lives, results in intergenerational benefits.”—with a citation added to EPA’s regulatory analysis of the lead/copper rule.

In the paragraph on page 10-25 in discount rates, the *Guidelines* should make clear, as Chapter 6 did, that a consumption rate-based discount rate, or a declining discount rate framework, is more appropriate for the intergenerational context. At line 12 of page 10-25, the following language should be added: “For policies with long time horizons, analysts should use the consumption rate of interest to set the discount rate, or should use other approaches like a declining discount rate framework.”

Respectfully,

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²⁰ See Policy Integrity, Comments to the CPSC on Corded Window Coverings (June 1, 2015), https://policyintegrity.org/documents/CPSC_Comments_June2015.pdf (summarizing the evaluation of parental grief). See also Cass Sunstein, *Rear Visibility and Some Unresolved Problems for Economic Analysis (with Notes on Experience Goods)* (July 1, 2019) (quoting NHTSA’s findings that “most people place a high value on the lives of children and that there is a general consensus regarding the need to protect children as they are unable to protect themselves” and that “an exceptionally high emotional cost, not easily convertible to monetary equivalents, is often inflicted upon the families of backover crash victims”).

²¹ See Policy Integrity, Comments on the Lead/Copper Rule (Feb. 11, 2020), https://policyintegrity.org/documents/EPA_Lead_Copper_Rule_Comments_2020.02.11.pdf.